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Gas System Operator incentives review 2015-18: Final proposals

Consultation

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Overview:

This document sets out our final proposals to renew three incentives that apply to National Grid Gas (NGG) as system operator of the gas transmission system.

Two of these incentives expire on 31 March 2015. They were introduced for the first time in 2013 to drive the provision of demand forecasts two-to-five days ahead of real time and improvements in NGG's network maintenance planning process. The third incentive expires on 31 March 2016 and aims to reduce greenhouse gas emissions from gas compressors. Although they expire in different years, we have combined their review to efficiently engage with industry. For the proposed incentives we intend to set them to expire in March 2018.

These three incentives support three of our strategic consumer objectives:

- **Lower bills** than would otherwise have been the case
- **Reduced environmental damage** both now and in the future
- **Improved reliability and safety**

Alongside these final proposals, we are launching a statutory consultation to implement these changes in the system operator's licence. We are seeking stakeholder feedback on how the draft licence conditions reflect the proposed policy.

Context

National Grid Gas (NGG) is the gas transmission System Operator (SO) responsible for balancing the system on a continuous basis across Great Britain. To do this, NGG buys and sells gas and procures associated services. It also provides information to market participants such as demand forecasts. NGG is obliged to perform its role in an economic and efficient manner.

Ofgem sets incentives on NGG to promote behaviours that improve the efficient operation of the system. These incentives support three of our five consumer outcomes: **lower bills** than would otherwise have been the case; **reduced environmental damage** both now and in the future; and **improved reliability and safety**.

There are currently ten incentives in place on NGG covering areas such as residual balancing, demand forecasting, shrinkage and maintenance. These incentives were last set on 1 April 2013 and most are in place for an eight year period to align with the RIIO-T1 price control. Where we introduced new incentives or substantially changed the form of incentives, we set them for a shorter period to enable us to assess their effectiveness before committing to longer timescales.

Associated documents

- **Statutory Consultation on Changes to NGG licence conditions:** https://www.ofgem.gov.uk/ofgem-publications/93982/noticeundersection232ofthegasact1986-pdf
- **Gas System Operator Incentives Review – Initial Proposals**: https://www.ofgem.gov.uk/publications-and-updates/gas-system-operator-incentives-review-201516-initial-proposals
- **Gas System Operator Incentives Review - Initial Consultation:** https://www.ofgem.gov.uk/publications-and-updates/gas-system-operator-incentives-review-initial-consultation
- **Gas System Operator Incentive schemes from 2013 final proposals consultation**: https://www.ofgem.gov.uk/publications-and-updates/gas-system-operator-so-incentive-schemes-2013-final-proposals-consultation

- **National Grid: External Incentive Plan – 2014 Review**: http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=34565

Contents

Executive Summary

This document sets out our final proposals to renew three incentives on National Grid Gas (NGG) as gas transmission system operator (SO) that expire in March 2015 and March 2016.

NGG is responsible for balancing the gas transmission system on a continuous basis across Great Britain. To do that, NGG buys and sells gas and procures a range of services. It also provides information to market participants such as demand forecasts. We set incentives on NGG to produce outputs that are in the best interest of consumers and reduce the costs it incurs to operate the system.

These incentives support three of our strategic consumer outcomes:

- **Lower bills** than would otherwise have been the case
- **Reduced environmental damage** both now and in the future
- **Improved reliability and safety**

In April 2013, we introduced ten incentives on NGG. Most of them were set to expire in March 2021, aligned with the RIIO-T1 incentives. However, three were set for a shorter period as they were new or had been substantially changed from the previous incentive scheme.

These three incentives encourage NGG to:

- Improve the accuracy of its two-to-five days ahead demand forecasts[1]
- Reduce the impact of maintenance on system users[2]
- Reduce greenhouse gas (GHG) emissions from compressors.[3]

Initial proposals

In October 2014, we consulted on our initial proposals to renew these three incentives. We proposed to keep the existing incentive structure and change parameters where appropriate as we considered that the current incentives were appropriately driving NGG's behaviour.

We also proposed complementing the incentive on reducing GHG emissions by introducing a mechanism to encourage NGG to improve its understanding of the causes of GHG. We proposed to have a one-off potential reward of up to £400,000 available to NGG in respect of this work.

We agreed with feedback from stakeholders to our initial consultation that it was not appropriate to set these incentives until the end of the RIIO-T1 period. As such, we

[1] Demand forecasts assist industry parties making decisions in relation to the balancing of their supply and demand positions (expires March 2015);
[2] Our maintenance incentive aims to reduce the impact of routine maintenance and provide greater confidence in when maintenance of the National Transmission System (NTS) will impact users (expires March 2015);
[3] Operations of compressors can release methane into the atmosphere, a potent GHG (expires March 2016).

proposed to set them until March 2018. We believed that this would give us further evidence on their effectiveness and value before committing to longer timescales.

We received only four responses to the consultation. Respondents were broadly supportive of our proposals to introduce new incentives for the three target areas.

Our final proposals

Having considered stakeholder responses we are proposing to introduce new incentives for each of these three areas largely based on the existing schemes.

We are also continuing to propose the introduction of a targeted investigation mechanism outside Network Innovation Allowance (NIA) for GHG emissions. Unlike NIA, this mechanism is focused on GHG and would only reward NGG if certain milestones are reached.

Our proposed adjustments to the incentive schemes are summarised as follows:

- Tightening the targets of both the maintenance and demand forecasts incentive to account for improvements in performance that the SO has now embedded in business-as-usual processes.
- Setting the greenhouse gas emissions target to the minimum-level ever recorded in a rolling 12 months period, setting a challenging and credible target for the SO.
- Introduction of a new mechanism that will reward initiatives and solutions in the understanding, management and mitigation of greenhouse gas emissions until 2021.

Next steps

Alongside this document, we have also launched a statutory licence consultation to reflect these changes in NGG's licence. We seek stakeholder views on whether our proposed licence conditions appropriately reflect this policy. Subject to this consultation, we intend to direct these changes to NGG's licence.

These changes would be implemented in NGG's licence 56 days from any direction. Nevertheless, to ensure that NGG is incentivised through the entire incentive year, our intention is that they will apply from 1 April 2015 or 2016 as appropriate.

1. Summary of proposals

Chapter Summary

This chapter describes our incentives on the System Operator, summarises our final proposals and sets out the next steps.

Question box

Question 1: Do the draft licence conditions published alongside this document appropriately reflect our final proposals?

1.1. There are ten incentives on the gas System Operator (SO).[4] They encourage NGG to balance the system in an efficient and economic manner and to facilitate the ability of market participants to balance their own positions. These incentives support the delivery of three of our strategic consumer outcomes:

- **Lower bills** than would otherwise have been the case
- **Reduced environmental damage** both now and in the future
- **Improved reliability and safety**

1.2. The current gas SO incentive schemes were set in April 2013 and most are aligned with the RIIO-T1 incentives until 2021. However, three of the incentives were set for a shorter period of time as they were either new or had been substantially changed from the previous incentive scheme. These three incentives encourage NGG to:

- Improve the accuracy of its two-to-five days ahead demand forecasts1
- Reduce the impact of maintenance on system users2
- Reduce greenhouse gas (GHG) emissions from compressors3

1.3. Two of these incentives are due to expire at the end of March 2015[5] and one at the end of March 2016.[6]

Initial proposals

1.4. In October 2014, we published our initial proposals consultation which outlined our intention to maintain the three incentives. In our view these incentives targeted behaviours that were in the best interest of consumers.

[4] These incentives cover areas such as demand forecasts, shrinkage, residual balancing, greenhouse gas emissions, and unaccounted for gas.
[5] The two-to-five days ahead demand forecast and Maintenance incentives.
[6] The GHG emissions incentive

1.5. We also proposed to align the end date of the incentives until March 2018. We believed this would be appropriate as it would give us more time to assess the incentives effectiveness and whether these outputs continued to be in the interest of consumers.

Final proposals

1.6. There were four responses to our initial consultation. Respondents were broadly supportive of the proposed way forward although did raise specific views on detailed aspects of the proposals.

1.7. Having taken on board these responses, we are proposing to set new incentives largely based on the existing frameworks. These incentives would be introduced from April 2015 or April 2016 as appropriate for a two to three year period (until March 2018). We have made some changes to the incentive parameters to increase their effectiveness and are proposing to introduce a new mechanism on GHG. Table 1 below summarises our final proposals for these incentives.

Table 1: Summary of Final Proposals

Incentive	Final Proposal
Two-to-five days ahead demand forecast	▪ Tighten target to 13.7mcm (from 16mcm) ▪ Cap of £10m & floor of −£1m
Maintenance	*Change of maintenance days* ▪ Halve target to 7.25% of relevant days ▪ Include Advice Notices
	Number of maintenance days ▪ Tighten target for Remote Valve Operations (RVO) to 11 days per year ▪ Remove Inline Inspections (ILIs) from financial incentive due to lack of operational control ▪ Reduce scheme floor to −£500,000 ▪ Remove scheme cap by virtue of a new natural cap of £215,000 created by the new incentive targets ▪ Introduce reputational incentive to report ILI length
GHG emissions	▪ Maintain a downside only incentive ▪ Amend target for both years to 2,897t to reflect the minimum emission level taken on a rolling 12 month basis* ▪ Introduce requirement to investigate and report venting by sphere of control ▪ Introduce GHG investigation mechanism to further research on (i) causes / drivers, (ii) measurement and (iii) cost-effective mitigations of venting with a one-off potential reward of £500,000, where outputs (i) and (ii) must be completed by 01/12/2017 to be taken into account for next regime ** ▪ Introduce overarching principle that NGG must demonstrate why it has not carried out the research previously

*initial proposal froze emission target for 2016-17 and 2017-18 at 2015-16 levels (2,744t)
**initial proposal did not specify a completion date for outputs (i) and (ii) and set the one-off potential reward at £400,000

Next steps

1.8. Alongside this document, we have also published a statutory licence consultation on the changes to NGG's licence. We seek stakeholder views on whether our proposed licence conditions appropriately reflect this policy. Subject to this consultation, we intend to direct these changes to NGG's licence.

1.9. These changes would be come into effect 56 days after any direction. Nevertheless, to ensure that NGG is incentivised through the entire incentive year, our intention is that they will apply from 1 April 2015 or 2016 as appropriate.

2. Final Proposals

Chapter Summary

This chapter describes our final proposals for our two to five days ahead demand forecasting (D2-D5) incentive, maintenance incentives and greenhouse gas emissions incentive. It summarises the views expressed by respondents to our consultation and our analysis to reach our final proposals for incentives up to 2018.

Two-to-five days ahead demand forecast

Background

1.1. NGG publishes national gas demand forecasts over a range of timescales to assist the industry in making efficient decisions in balancing their supply and demand positions.

1.2. The two-to-five days ahead demand forecast incentive was introduced in 2013 with the aim of improving the accuracy of these demand forecasts. Incentives were already in place (and continue to be in place) for day-ahead demand forecasts. More accurate forecasts should allow shippers to better balance their positions, improving market efficiency and reducing the need for NGG to balance the system. This should result in lower costs to consumers.

1.3. This incentive sets a target for the average forecast error for the year for demand forecasts two-to-five days ahead. For every day of the year, the average forecast error across these four forecasts is produced. These errors are then averaged giving greater weight to the periods of higher demand, when there is greater value to parties having accurate information to assist in balancing their position.

1.4. NGG has significantly improved the accuracy of these forecasts since the introduction of this incentive. In the first year of the scheme, NGG's performance was 13.1mcm against a target of 16mcm.[7]

Initial proposals

1.5. In our initial proposals, we proposed to maintain the current cap and floor and incentive structure when extending this incentive. We also proposed to review the incentive again before the end of the RIIO-T1 incentive period (March 2021).

[7] The incentive target is set at the average forecast error for the period 2010-2013

1.6. We proposed to reduce the incentive target by 2.3mcm from 16mcm to 13.7mcm. Our proposed target took account of the extent that NGG's performance was due to its actions when accounting for external factors.[8]

Stakeholder views

1.7. All four responses to our consultation commented on this incentive. Three respondents felt that the proposed target of 13.7mcm was too high given the performance of NGG in forecasting demand during 2013-14. In its response, NGG stated that it believed this target set the correct balance between recognising its current performance and setting an ambitious target for future performance.

1.8. Regarding the use of these forecasts, SSE stated that it does not use them, while Energy UK believed they were not widely used. Both SSE and Energy UK felt that more focus should be placed on the day-ahead demand forecasts as these have greater value when determining positions. SSE also suggested that a survey should be carried out to establish the value of this forecast to the market. However, NGG indicated that smaller market players (including large energy users) did use and value the accuracy of these forecasts as they did not have their own in-house forecasts.[9]

Final proposals

1.9. While we accept the high value placed on the day-ahead forecast, we still believe it is appropriate to retain the two-to-five days ahead forecast incentive since accurate forecasts provide valuable information to the industry in particular to smaller industry participants.

1.10. At the same time, we agree that these forecasts should provide higher value in situations of system stress. However, we do not have enough evidence to assess this at this time since the past two winters have been mostly benign. Our review ahead of 2018 will consider whether we have sufficient data by then to make this assessment.

1.11. Following our initial proposals consultation, we carried out further analysis to check the robustness of our findings with additional information on the internal and external factors that NGG felt impacted their ability to forecast demand accurately (see Appendix 1). This analysis supported our initial proposals and estimation of NGG's performance.

1.12. We continue to propose to tighten the incentive target to ensure their ongoing effectiveness. However, we are not proposing to tighten the target to the 2013-14 actual incentive performance. We continue to believe it would not be appropriate to set the target for a three-year scheme based solely on the performance in a

[8] Our econometric analysis concluded that NGG was responsible for 2.3mcm out of the 2.9mcm outperformance in 2013-14. Further information in Appendix 1.
[9] See page 24 of National Grid "System Operator External Incentive Plan – 2014 review"

relatively benign winter. Similarly, we would not have proposed to raise the target had an unseasonably cold winter led to poor performance against the incentive. This is because setting the incentives at the extremes would dilute the incentive to improve its forecasts in particular during challenging winter periods. Our proposal recognises this by adjusting the target using a quantitative analysis that takes account of these external factors.

1.13. Hence, we propose to maintain this demand forecast incentive for 2015-18 as described in our initial proposals. Before 2018, we intend to engage with stakeholders to assess whether there is enough benefit to the industry and consumers to maintain this incentive until the end of the RIIO-T1 period.

Maintenance incentive

Background

1.14. The maintenance incentive aims to increase the efficiency of how NGG plans and carries out maintenance work to ensure the safety, security and efficiency of the National Transmission System (NTS). The incentive consists of two targets, the "Maintenance Days Target" and the "Maintenance Change Target", where the first seeks to minimise the number of days taken to complete routine maintenance works and the second seeks to minimise the changes NGG makes to its maintenance plan.[10]

1.15. Over the past year, NGG greatly outperformed both the maintenance days target and maintenance change target. It reported 31 maintenance days (of which 6 RVOs) against a target of 72.3 days for 2013-14 and 4 maintenance days (all RVOs) against a target of 44.65 for 2014-15. It did not change any maintenance day in either 2014-15 or 2015-16. This very strong outperformance led to revenues to NGG of £1.1m in 2013-14 and forecast revenues of £0.9m for 2014-15.

Initial proposals

1.16. We proposed to maintain this incentive and extend it until March 2018. We intended to adjust the incentive structure and target to reflect NGG's step-change in performance against the incentive.

1.17. We proposed to halve the maintenance change target to 7.25% and reduce the maintenance days target for RVOs to 11 days/year. This reflects the significant outperformance against the incentive. However, this proposal also reflected the limited historical information available.

[10] A description of the incentive scheme and NGG's performance can be found in our initial proposals.

1.18. We also proposed to remove ILIs from the maintenance days target and introduce a reputational incentive to report on ILI length due to the lack of operational control NGG has to reduce the length of ILIs.[11]

1.19. We also proposed to realign the incentive revenue for the maintenance days target so as to increase the reward for performance if NGG takes less than 5 maintenance days for RVOs (£25,000) while lowering the potential gains for performance between 5 and 10 maintenance days for RVOs (£15,000). This would increase the incentive for NGG to further reduce the impact of RVOs on consumers. To maintain a balanced risk/reward profile, we also proposed to reduce the floor in this incentive to -£500,000.

1.20. Our initial proposals noted the importance of maintaining the value of the incentive as well as seeking to reward continuous improvement. The realignment of incentive revenue and tightening of targets outlined above sought to achieve this aim.

Stakeholder views

1.21. Respondents broadly welcomed the initial proposal to tighten the targets of both parts of the incentive.

1.22. British Gas disagreed with the inclusion of advice notices in the changes to maintenance days target, questioning the compatibility of the proposal with the original intent of the incentive – to minimise the impact of unexpected outages on customers. However, other stakeholders welcomed the inclusion of advice notices within the scope of the scheme.

1.23. Energy UK suggested extending the proposed reputational incentive on NGG to report on all maintenance types in addition to ILIs.

1.24. NGG proposed reassessed targets for both the Maintenance Change and Maintenance Days incentives, which it believed would create a more balanced risk/reward profile. In its response, it proposed a target of 10% of changes to maintenance days and 17 maintenance days per year for RVOs.

Final proposals

1.25. We have made no changes from our initial proposals. We consider that the targets proposed represent a fair risk/reward framework that provides value for NGG and will drive improvements that benefit consumers.

[11] NGG has flagged that the speed of ILI runs is determined by the physical limits of the speed that a Pipeline Inspection Gauge (PIG) can travel through the pipeline.

1.26. These targets have been formulated on both historical performance and an understanding that the existing dataset is limited. As such, they have been designed to provide value for NGG, as well as encourage continuous improvement against the baseline of strong performance that NGG has achieved. We do not believe that setting the target at NGG's proposed levels would provide the appropriate incentive to improve performance and would reward NGG for business as usual performance.

1.27. We continue to propose to include advice notices in the maintenance change target. We reiterate our intention for the incentive to encourage NGG to provide certainty to system users for any maintenance of the NTS that may impact them. The inclusion of advice notices is in line with this intention as it extends this incentive to participants that agree maintenance periods with NGG.

1.28. We are not proposing to extend the ILI reporting requirement to include other types of maintenance as NGG already publishes annual reports on its maintenance. We encourage NGG and the industry to work together to make sure the existing reports provide the appropriate level of transparency to industry on NGG's maintenance process. Instead, we believe it is appropriate to replace the current financial incentive on ILIs by a reporting requirement to monitor performance.[12] If industry participants have any particular concerns regarding the transparency of NGG's maintenance schedules, please raise these with ourselves and/or NGG.

1.29. We are also proposing to maintain the principle that user-led requests to change a maintenance day should be applied to advice notices. Similarly, we do not believe that if an advice notice is changed during a user outage, and the change is agreed between system user and NGG that it should constitute a change.

Greenhouse gas emissions

Background

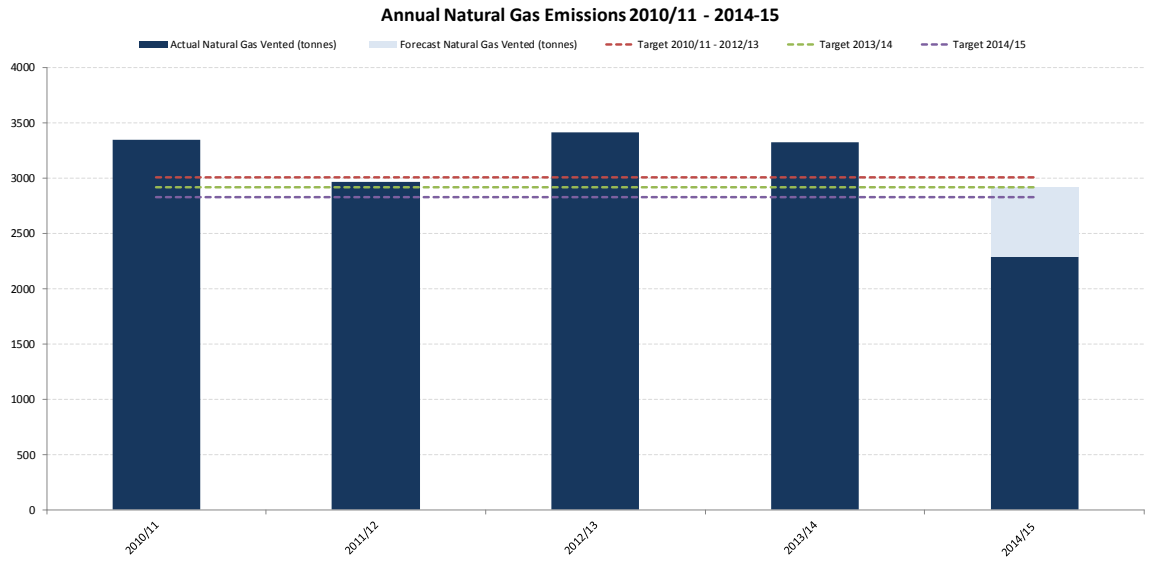
1.30. The GHG emissions incentive creates an incentive for NGG to minimise emissions from compressors during the operation and maintenance of the NTS.

1.31. Under this incentive, NGG can face a penalty if emissions exceed the target, but there is no financial reward for emitting less than the target. The incentive penalty is calculated as the volume of emissions above the target priced at the Department of Energy and Climate Change's (DECC) non-traded carbon price, currently valued at £1,302 per tonne (2013-14 prices).[13]

[12] This will ensure that we can monitor the impact of removing this incentive until 2018.
[13] The methodology for calculating the non-traded carbon price can be found in DECC's 'Valuation of energy use and greenhouse gas (GHG) emissions' guidance document, at the following link:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/360316/20141001_2014_DECC_HMT_Supplementary_Appraisal_Guidance.pdf

1.32. Since the Greenhouse Gas Emissions measurement methodology was changed in 2010-11, NGG's emissions were above the target in three out of four years. In 2013-14, NGG emitted 3,330t against a target of 2,917t. This resulted in a loss of £0.54m. Up to January 2015, NGG has emitted 2,285t against a target of 2,829t. Table 2 below summarises performance against this incentive since 2010-11.

Table 2: NGG performance against GHG incentive



Initial proposals

1.33. We proposed to maintain the financial incentive on GHG emissions under a similar incentive structure (i.e. downside-only) while aligning the incentive period with the March 2018 expiration of the two-to-five days ahead demand forecast and maintenance incentives.

1.34. Our view was that the target should be frozen at the 2015-16 level (2,774t) for 2016-17 and 2017-18. We believed this would provide a challenging and yet achievable target to NGG.

1.35. We also proposed to introduce an additional incentive on GHG emissions. This incentive would aim to foster transparency into this complex area and result in research findings that lowered emissions.

1.36. To support this research, we proposed a one-off reward payment (capped at £400,000) for the successful completion and implementation of its findings. Any payment would be subject to NGG demonstrating the achievement of specific criteria covering the three aspects of this incentive. We also proposed to publish a guidance document clarifying what we would expect to see from NGG on any application.

Stakeholder views

1.37. Three responses expressed views on this incentive. Energy UK and British Gas did not oppose our proposed target. NGG, on the other hand, expressed its view that a higher target of 2,897t would be more realistic. Their proposed target is based on the minimum rolling average of actual venting levels since 2010.

1.38. NGG was the only stakeholder to comment on the structure of the incentive. It expressed its view that a symmetrical incentive design would provide a more balanced risk and reward profile.

1.39. Regarding the research incentive, British Gas, Energy UK and NGG agreed with the initial proposal for NGG to carry out further research into (i) causes / drivers, (ii) measurement and (iii) cost-effective mitigations of venting. Energy UK thought it would also be useful to understand how this incentive would interact with the Energy Efficiency Directive.[14]

1.40. We received mixed views from these respondents on the value of the one-off reward incentive. Energy UK agreed with our proposal, while NGG believed that a higher potential reward of £700,000 would be more suitable. British Gas, however, believed that an additional funding mechanism was not appropriate. In its view, it would be more appropriate to use the Network Innovation Allowance (NIA) to fund the research rather than a separate mechanism.

Final proposals

1.41. We are proposing to maintain the current downside only incentive for the period 2016-18. As stated in our initial proposals, we are not sufficiently persuaded that it would be appropriate to move to a symmetrical incentive at this point given the need for (i) better understanding of underlying causes and drivers of venting as well as (ii) more accurate measurement of venting events.

1.42. We are also proposing to amend the incentive scheme target in line with NGG's proposal of 2,897t per annum for the period 2016-18, 153t above our initial proposal. We have taken the technical difficulties associated with managing system vents in an increasingly volatile demand and supply environment into consideration. We believe that targeting this level of performance is appropriate as it sets incentive parameters which are realistic and reflective of historical performance whilst remaining suitably challenging.[15]

[14] Energy Efficiency Directive: Establishes a common framework of measures for the promotion of energy efficiency within the European Union (EU). Aim is to achieve 20% efficiency in the EU by 2020 and to put in place a framework for further improvements beyond that date.

[15] This represents a target of 2,897t per annum, 153t above our initial proposals target.

1.43. We also continue to believe that increasing transparency on venting and the creation of a new research incentive on the (i) causes / drivers, (ii) measurement and (iii) cost-effective mitigations of emissions are in the best interest of consumers.

1.44. As outlined in their business plan, NGG have faced significant challenges against the GHG incentive. We are of the view that it is appropriate to introduce a specific investigation mechanism outside the existing Network Innovation Allowance (NIA)[16] in order to incentivise improved performance against the GHG incentive. Isolating GHG innovation through a standalone research incentive, rather than using the existing NIA mechanism as suggested by BG, will encourage NGG to focus on areas of development that might not have been investigated within the NIA. The proposed investigation mechanism does not prevent NGG from seeking NIA funding to explore work in areas with emissions implications.

1.45. This will provide a stronger incentive on NGG to drive improvements in this particular area. Also, since we approve the business plan (and thus the objectives) and have discretion in setting the level of the one-off reward incentive, we have further capability to encourage NGG's innovation with respect to reducing GHG emissions.

1.46. We consider the incentive is in line with Article 15(1) of the Energy Efficiency Directive. The incentive has been developed in line with the regulatory framework for Great Britain. This framework is designed to ensure that the appropriate incentives exist for electricity and gas network companies to pursue the most cost-effective delivery of their goals by adopting best practice energy efficiency measures. The Energy Efficiency Directive requires a report on the energy efficiency potential of GB energy infrastructure, of which the latest report[17] demonstrates that our approach to designing a regulatory framework for minimising losses or shrinkage will always be based on cost benefit analysis.

1.47. On the value of the one-off incentive reward, we are proposing to increase the cap by £100,000 to £500,000. We believe that this value corresponds with the benefit that can be accrued by consumers.[18] While we agree with NGG that a higher potential reward is beneficial to drive innovation, we are not convinced that a potential reward of £700,000 would be appropriate nor reflect potential consumer benefits.

[16] Our NIA guidance document can be found in the following link: https://www.ofgem.gov.uk/network-regulation-%E2%80%93-riio-model/network-innovation/gas-network-innovation-allowance

[17] Our assessment of the energy efficiency potential of the gas and electricity infrastructure of Great Britain can be found at the following link: https://www.ofgem.gov.uk/ofgem-publications/93879/energyefficiencydirectivereportfinal-pdf

[18] Our proposed reward value takes account of the value to consumers of lower emissions priced at the non-trade price of carbon (£1,302 per tonne in 2013-14 prices) for a potential emissions reduction of approximately 400t.

1.48. To make sure the findings of any research can be used in resetting this incentive, we are proposing that its outputs need to be completed by 1 December 2017.

Appendices

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Appendix 1 – Econometric Analysis on D-2 to D-5 demand forecasting incentive

1.1. We conducted an econometric analysis to inform our analysis on the appropriate target for the period 2015-18 for the two to five days ahead demand forecast incentive. The analysis sought to infer the extent that performance since the introduction of the incentive could be attributed to NGG's improvements to gas demand forecasting and how much was due to factors outside its control.

1.2. This followed NGG's business plan which demonstrated that conditions in winter 2013-14 were significantly more benign than average conditions. In NGG's view, this justified setting the target at a higher level than 2013-14 performance.

1.3. For that analysis, we assessed the potential external factors that could have influenced NGG's performance. This included weather (CWV) and factors that impacted demand (CCGT, Interconnector and storage). We then set a dummy variable (binary variable) as a proxy for the introduction of the current models.

1.4. We used data available from NGG's Market Information Provision Initiative (MIPI) and Business Plan for the period 2010-14. The findings in our initial proposals suggested that NGG's improved models led to a reduction in the forecasting error of 2.3mcm/d and as such the proposed target was set at 13.7mcm/d.

1.5. Following the initial proposals, we reran our econometric model using the latest available data (up to October 2014). Further analysis was also undertaken on alternative factors that could have impacted on forecasting accuracy however these were discounted as they were seen as statistically insignificant. This enhanced analysis confirmed that the findings in the initial proposals were robust and the target was set at 13.7mcm. Table 3 below summarises the results of our econometric analysis.

Table 3 - Summary of Econometric Analysis

Variables	Coefficient	t-statistics	P-value
CWV	-0.18	-1.86	0.0634
Net medium range storage (mcm/d)	0.03	1.75	0.0810
Interconnector Net Flows (mcm/d)	0.04	2.44	0.0147
CCGT demand	-0.03	-1.45	0.1484
Average D2 to D5 Absolute Forecasting Error L.1 (mcm)	0.54	18.83	0.0000
Average D2 to D5 Absolute Forecasting Error L.2 (mcm)	-0.11	-3.88	0.0001
Model dummy variable	-2.27	-3.56	0.0004
R^2	0.334		
Adjusted R^2	0.330		
Significance F	<0.001		
Observations	1205		

Appendix 2 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific question we have set out at the beginning of chapter 1.

1.3. Responses should be received on or by **16/04/2015** and should be sent to:

Leonardo Costa
System and Wholesale Market Operations
9 Millbank, London, SWP1 3GE
0203 263 2764
soincentive@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Next steps: Having considered the responses to this consultation, Ofgem intends to direct changes to NGG's licence to implement this policy. Any questions on this document should, in the first instance, be directed to Leonardo Costa, details as above.

Appendix 3 - Glossary

A

The Authority/Ofgem/GEMA

Ofgem is the Office of Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (The Authority or GEMA), the body established by Section 1 of the Utilities Act 2000 to regulate the gas and electricity markets in Great Britain.

B

Balancing charges

Charges that National Transmission System (NTS) users pay for differences between their inputs and offtakes from the NTS and for differences between their nominated and delivered quantities.

C

Cap

The maximum incentive payment the SO is permitted to receive as part of an incentive scheme (this may also be subject to a 'sharing factor').

Consumer

In considering consumers in the regulatory framework we consider users of network services (for example, generators, users) as well as domestic and business end consumers, and their representatives.

Composite Weather Variable (CWV)

A weather variable that is linearly related to non-daily metered gas demand. It takes into account not only temperature, but also other factors including wind speed, effective temperature, etc.

Compressor Station

An installation on the NTS that uses gas turbine or electricity driven compressors to boost pressures in the pipeline system; it is used to increase transmission capacity and move gas through the system.

E

Energy Efficiency Directive

Establishes a common framework of measures for the promotion of energy efficiency within the European Union (EU). Aim is to achieve 20% efficiency in the EU by 2020 and to put in place a framework for further improvements beyond that date.

F

Floor

The maximum loss the SO can make as part of an incentive scheme (this may also be subject to a 'sharing factor').

I

Inline Inspection (ILI)

An inspection of a pipeline from the interior of the pipe, using an in-line inspection tool

L

Licence conditions (obligations)

Obligations placed on the network companies to meet certain standards of performance. The Authority (GEMA) has the power to take appropriate enforcement action in the case of a failure to meet these obligations.

N

National Grid Electricity Transmission (NGET)

NGET is the Transmission System Operator for Great Britain. As part of this role it is responsible for procuring balancing services to balance demand and supply and to ensure the security and quality of electricity supply across the Great Britain Transmission System.

National Grid Gas Plc (NGG)

The licensed gas transporter responsible for the gas transmission system, and four of the regional gas distribution companies.

National Transmission System (NTS)

A high pressure system consisting of terminals, compressor stations, pipeline systems and offtakes. Designed to operate at pressures up to 85 bar. NTS pipelines transport gas from terminals to NTS offtakes.

O

Outputs

What the SOs are expected to deliver.

P

Price control

The control developed by the regulator to set targets and allowed revenues for network companies. The characteristics and mechanisms of this price control are developed by the

regulator in the price control review period depending on network company performance over the last control period and predicted expenditure in the next.

R

Remote Valve Operations (RVO)

RVOs are controlled remotely from National Grid Gas control centre and are used to control the flow of gas onto the system and to isolate pipelines if required, such as during maintenance.

RIIO–T1

RIIO–T1 is the first transmission price control review under the new regulatory framework known as RIIO (Revenue = Incentives + Innovation + Outputs). The RIIO model builds on the previous RPI-X regime, but is designed to better meet the investment and innovation challenge by placing much more emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers.

S

Stakeholder

Stakeholders are those parties that are affected by, or represent those affected by, decisions made by network companies and Ofgem. As well as consumers and companies involved in the energy sector, this would for example include Government and environmental groups.

Storage (gas)

Installations owned by Gas Distribution Networks (GDNs) and storage capacity contracted from third parties e.g. salt cavities, liquefied natural gas (LNG), storage vessels and gas holders. Gas storage is required to balance diurnal and seasonal variations in supply and demand.

System Operator (SO)

The entity charged with operating either the GB electricity or gas transmission system. NGET is the SO of the high voltage electricity transmission system for GB. NGT is the SO of the gas NTS for GB.

V

(Compressor) venting

Operational emissions from the gas compressors for the purposes of maintaining system pressure.

Appendix 4 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

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